



# START EARLY TO BUILD A HEALTHY FUTURE

The research linking early learning and health

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Provide children a healthy start, watch how they bloom.



**Every child deserves a fair chance. A chance to learn, grow, explore possibilities, persevere and achieve his or her potential. The Ounce of Prevention Fund believes that no child's potential should be limited by poor health.**

Good health in early childhood is an essential component of school readiness. The benefits of health and learning are mutually reinforcing: A healthy child is less likely to miss school and is better able to concentrate and process information in class, and the skills the child acquires in school often pay off in mental and physical health benefits down the road.

What's more, good health doesn't simply start in a pediatrician's office—it is nurtured in homes, classrooms and playgrounds, and we all have a role to play in helping every child reach his or her potential for a lifetime of health.



## CHILDREN IN POVERTY FACE A HEALTH GAP

While much attention and effort have been directed at addressing the widening achievement gap in the United States, children growing up in poverty face an equally pervasive and related health gap: By and large, they have markedly worse health than their higher-income peers. In fact, children in poor families are almost five times more likely than their higher-income peers to be in “less than optimal health.”<sup>1</sup> This health gap appears early in life and grows larger over time,<sup>2</sup> diminishing the potential for children in poverty to lead lives unfettered by illness or injury.

Forty-nine percent of American children under three and 48% of those between three and five live in poverty or near-poverty.<sup>3</sup> All told, this means that 11.5 million children under six face heightened risk of adverse health in their lives. These children receive fewer vaccinations and experience higher incidences of childhood injury, chronic disease, suppressed immune systems, and cognitive and behavioral challenges.<sup>4</sup> Disparities in the



development of chronic diseases are often already present by the time children are preschool age<sup>5</sup> and persist throughout their lives.<sup>6</sup>

To overcome the health disparities facing our country's youngest citizens, we must first understand the research on the foundational supports that every child needs to prevent chronic disease and build strong health over the lifespan.

## SOCIAL DETERMINANTS OF HEALTH DISPARITIES

Even before birth, many factors converge that will profoundly influence a child's lifelong health. Put simply, early experiences—whether positive or negative—can leave biological imprints on developing bodies of young children, with strong and lasting effects. Research suggests two of the ways that adverse experiences can get “under the skin”<sup>7</sup>: through the accumulation of physical and psychological stress over time, or through heightened activation of the stress-response system during sensitive periods of development, such as early childhood. Child development experts describe the consequences of prolonged activation of the body's stress response system with the term “toxic stress.”<sup>8</sup> This toxic stress can have detrimental effects on lifelong health. A seminal study found that adults who report being exposed to frequent or intense stress in early childhood are significantly more likely to develop cardiovascular disease, diabetes, cancer and depression, and to use tobacco, illicit drugs and alcohol.<sup>9</sup>

Toxic stress affects families at all income levels. However, many families in low-income communities face challenging circumstances often called “social determinants” of health that place them at increased risk of sustained stress and poor health. As the Robert Wood Johnson Foundation's Commission to Build a Healthier America put it, “Where we live, learn, work and play can have a greater impact on how long and well we live than medical care. Our zip code may be more important to our health than our genetic code.”<sup>10</sup> Examples include food and housing insecurity, exposure to environmental toxins, limited health literacy, and many other factors. ●



## FOUNDATIONS OF HEALTH

Leading researchers from the Center on the Developing Child at Harvard University and the Women and Children's Health Policy Center at Johns Hopkins University have collaboratively identified four foundations of health that buffer young children against adverse childhood experiences, allowing their bodies and brains to develop without the lasting effects of toxic stress.



### Stable and Responsive Relationships

According to a report by the Robert Wood Johnson Foundation, "While much emphasis has been placed on the foundational importance of the early years for later success in school and the workplace, we are convinced that an environment of supportive relationships is also the key to lifelong physical and mental health."<sup>11</sup> Secure attachments with caregivers affect young children's ability to form relationships and regulate emotions.<sup>12</sup> Stable, responsive relationships support young children's social-emotional health, helping them develop skills such as trust, compassion, cooperation and self-soothing.<sup>13</sup> They also help build up children's neuroendocrine, stress regulatory, inflammatory, and immune systems.<sup>14</sup>



### Safe and Secure Environments

As young children grow, their exposure to different environments expands—from the prenatal environment to the home, school, community and beyond. The safety and security of their environments at every level have strong implications for their health throughout their lives, beginning prenatally. For instance, children whose mothers smoke tobacco or live in very stressful environments during pregnancy are more likely to be born with low birth weight, a significant risk for chronic diseases such as coronary heart disease, hypertension and diabetes.<sup>15</sup>



### Nutrition

A healthy diet fuels learning, growth and development and staves off obesity and disease. Nutritional interventions for young children have been shown to promote growth and development across every domain.<sup>16</sup> Undernourishment in early life, on the other hand, has been associated with higher risks for hypertension, insulin resistance and heart disease<sup>17</sup> and may play a key role in the development of osteoporosis, autoimmune diseases, diabetes and cancer.<sup>18</sup> And childhood obesity raises children's risks of developing heart disease, high blood pressure, cancer and asthma.<sup>19</sup>



### Health-Promoting Behaviors

Early learning about behaviors that promote health helps young children establish routines that lead to healthier choices throughout life. At this stage, young children are developing the ability to create causal theories about how things happen, as evidenced by their perpetual question, "Why?" Studies show that 2- and 3-year-olds can develop causal explanations of health, including an understanding that illness is caused by invisible germs and that, "He needs more to eat because he is growing long arms."<sup>20</sup> When young children are provided with healthy choices and child-friendly explanations of why healthy behaviors are important, they develop healthy habits at an early age.

**To learn how the Ounce supports the foundations of health, please see [theOunce.org/health](https://theOunce.org/health).**

## LINK BETWEEN EARLY LEARNING AND HEALTH

In addition to these four foundations of health, research shows that there is another critical factor that significantly affects children's chances at leading healthy lives: enriching early learning experiences. In the early years, learning opportunities help children develop the cognitive, social, emotional and behavioral skills as well as the neural connections that allow them to make decisions, control impulses, interpret social cues and build strong bonds with others—promoting health over the lifespan.

**A young child's health needs are tightly coupled to the child's developmental needs, since learning and health are mutually reinforcing.**

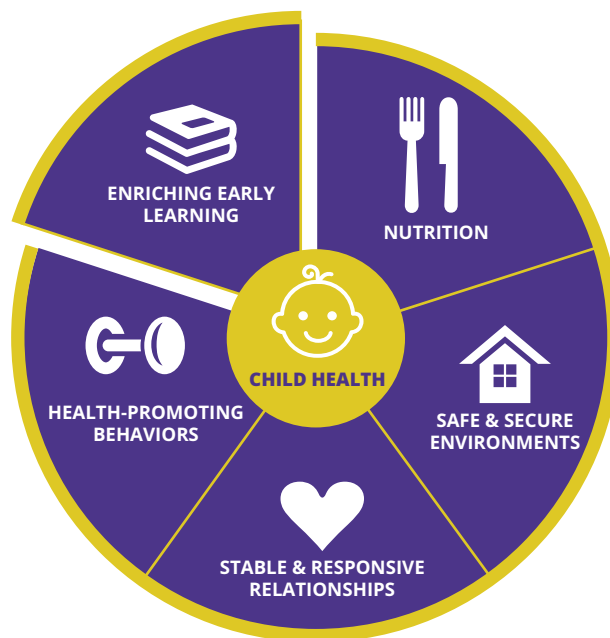
A large body of evidence links learning to lifetime health, even above and beyond the secondary health benefits of education, such as increased earnings.<sup>21</sup> A young child's health needs are tightly coupled to the child's developmental needs, since learning and health are mutually reinforcing. A healthy child is less likely to miss school and is better able to concentrate and process information in class, and the skills the child acquires in school often pay off in mental and physical health benefits down the road.<sup>22</sup> Hence, good health is a crucial component of school readiness.

The strong link between young children's learning and health has led to exciting new alliances between health care practitioners, educators and families. Acknowledging the critical importance of the first five years and the "interplay of health and development," the American Academy of Pediatrics (AAP) released a policy statement in June 2014 declaring language and literacy promotion "an essential component of primary care pediatric practice."<sup>23</sup>

In addition to early literacy and language, executive function is another group of skills developed in early childhood, enabling a child to focus, multitask, make decisions, think flexibly and handle anxiety or frustration.<sup>24</sup> Strong executive function skills have been linked to positive health outcomes throughout life, including better physical health in adulthood and a reduced likelihood of engaging in unhealthy behaviors such as overeating, smoking or substance use.<sup>25</sup>

These examples illustrate some of the fundamental ways that early learning helps to build a child's brain, constructing neural pathways and strengthening skills that promote healthy behaviors throughout life. We join the National Institute for Early Education Research in encouraging a definition of good health that "includes cognitive ability, a low likelihood of engaging in risky behaviors, mental stability, and positive social-emotional development" —all of which are fostered by early learning.

### ENRICHING EARLY LEARNING HELPS BUILD FOUNDATION FOR GOOD HEALTH



*Adapted from the Center on the Developing Child at Harvard University (2010). "The Foundations of Lifelong Health are Built in Early Childhood."*

## THE EVIDENCE: HIGH-QUALITY EARLY EDUCATION PROGRAMS LINKED TO HEALTH BENEFITS

Because high-quality early childhood programs support the foundations of health, one would expect that they pay off in health benefits for years to come. Indeed, findings from several landmark studies of high-quality early education and home visiting have linked participation in these programs to a variety of health benefits for participants throughout childhood and into adulthood, detailed in the following chart.

### RESEARCH LINKING HIGH-QUALITY EARLY EDUCATION & HOME VISITING TO HEALTH

#### PERINATAL HEALTH OUTCOMES



##### Improved health during pregnancy, childbirth and the postnatal period

- Dietary improvements during pregnancy
- Shorter length of labor and lower rates of cesarean delivery
- Increased spacing between pregnancies
- Lower incidence of maternal depression
- Higher rates of breastfeeding

#### CHILD HEALTH OUTCOMES



##### Improved physical health

- Better birth outcomes
- Lower rates of overweight/obesity
- Increased rates of age-appropriate screenings
- Increased access to age-appropriate immunizations
- Lower rates of injury, maltreatment and neglect
- Less emergency hospital care
- Reduced child mortality
- Fewer teen births

##### Improved oral health

- Increased access to dental care and screenings

##### Improved social-emotional and behavioral health

- Higher scores on measures of social-emotional development
- Fewer behavior problems

##### Increased engagement in health-promoting behaviors

- More likely to be physically active
- More likely to consume nutritious meals
- Lower rates of adolescent drug use

#### LONG-TERM HEALTH OUTCOMES IN ADULTHOOD



##### Improved physical health

- Reduced risk of coronary heart disease
- Lower rates of prehypertension and hypertension
- Lower systolic and diastolic blood pressure (among males)
- Higher levels of “good” HDL cholesterol (among male participants)
- Reduced incidence of metabolic syndrome (among males)
- Lower rates of abdominal obesity (among females)
- Better self-reported health

##### Improved mental health

- Fewer depressive symptoms

##### Increased engagement in health-promoting behaviors

- Lower rates and delayed onset of drug use
- More likely to engage in physical activity and to eat nutritious food (among females)

For a full list of references for the research cited in this table, please see [theounce.org/health](http://theounce.org/health).

## TO BUILD A HEALTHY FUTURE, START SMALL—AND EARLY



As evidence increasingly illuminates the links between childhood experiences in the first five years and later life health outcomes, voices from early childhood, health and allied fields unite in calling for greater access to quality early education, particularly for the youngest and most vulnerable children. In recent years, policymakers at the state and federal levels have elevated the important role of early childhood programs in improving health, education and employment outcomes for children and families. And leading organizations—including the Robert Wood Johnson Foundation's Commission to Build a Healthier America, the Academic Pediatric Association, the American Academy of Pediatrics and the Alliance for Early Success—are working to advance policy and program agendas that promote the shared goals of the health and early education sectors.

Yet despite these recent policy opportunities that support early childhood, many young children still lack access to high-quality care that provides the comprehensive supports they need to grow up healthy. More than two out of every three low-income 4-year-olds in home-based child care are in a setting rated as low quality.<sup>26</sup> And more than half a million 3- and 4-year-olds—

42% of those enrolled—attend early childhood programs that meet fewer than half of the quality benchmarks identified by the National Institute for Early Education Research.<sup>27</sup>

**High-quality early education programs have repeatedly proven to be sound investments with lasting health benefits – yet too few low-income children have access.**

For infants and toddlers, the situation is even more dire. According to the Robert Wood Johnson Foundation's estimates, "Only one of every nine children under age 3 who are eligible for federally supported developmental and care services actually receives them—leaving 4.8 million infants and toddlers in low-income families with unmet needs."<sup>28</sup> While high-quality early interventions have repeatedly proven to be sound investments with strong and lasting impacts on children's health, particularly among children in poverty, too few little ones have access—especially those who stand to benefit the most.



## RECOMMENDATIONS FOR EARLY EDUCATION AND HEALTH CARE POLICY, PRACTICE AND RESEARCH

In the context of a changing health care landscape that places increasing emphasis on disease prevention and health promotion—on keeping people healthy and thereby reducing the need for costly treatments later in life—early childhood programs have an opportunity to play a larger part. We call for increased investment in high-quality early education and family-support programs, as well as for greater coordination and integration across systems that touch the lives of vulnerable young children and their families. Here we offer five policy, practice, funding and research recommendations to bring us closer to achieving our vision of a healthy start for all.

- Direct health resources to the youngest and most vulnerable children from the prenatal period to age five. Ensure that young children and their families, particularly those facing poverty and other stressors, have access to comprehensive, high-quality early childhood education, home visiting, and health care services.
- Implement effective and evidence-based practices that meet young children's comprehensive needs in both early education and health care settings.
- Invest in systems to support high-quality and effective services in early childhood and health care settings.
- Build cross-sector collaboration to support young children in achieving good health and address children's interrelated health and developmental needs.
- Embark on research and evaluation that further explore and define the links between early learning and health.

These recommendations put forth a vision for a comprehensive approach to disease prevention and health promotion that takes into consideration the health and developmental needs of the “whole child.” A whole-child perspective acknowledges that a child's supportive and enriching experiences in homes and early education classrooms are as integral as medical care in giving every child a fair chance at health. High-quality early childhood programs with an intentional focus on health have a powerful role to play in narrowing the health gap and elevating children's chances at a healthy future from the very start.





## OUNCE INITIATIVES THAT ADVANCE THESE RECOMMENDATIONS:

The Ounce works to ensure that public policies and funding are in place to give vulnerable children access to voluntary, high-quality early childhood programs.



### POLICY

The Ounce **Illinois policy team** pursues policy changes that promote and support healthy child development, which includes physical and oral health, healthy social and emotional development, auditory and visual development and the nutritional and wellness needs of young children and pregnant women. The Ounce **national policy team** builds on the experiences and lessons of the Illinois policy and advocacy work, and partners closely with state leaders across the country to help them integrate health across early childhood systems and strengthen connections between the early childhood and health systems. And the **First Five Years Fund** mobilizes nationwide support for early education programs, citing the research evidence on early education's beneficial effects on health as well as economic well-being and academic achievement.

### PROGRAMS

**Educare** is a comprehensive early education program for children 6 weeks to 5 years old and their families living in poverty. Since 2000, the Ounce has partnered with the Buffett Early Childhood Fund, as well as other philanthropies, to replicate the Educare program model across the country. Each Educare School collaborates with healthcare providers to promote children's healthy development and school readiness. Four Educare Schools include on-site or neighboring health clinics, and two Educare Schools are linked to elementary schools with school-based health clinics. In addition, with our community-based partners, the Ounce offers **home visiting** to nearly 1,900 families throughout Illinois and a unique **doula program** to about 700 expectant mothers per year. These home visitors help promote healthy child development and ensure families are connected to medical, dental and mental health services. They also support parents to model healthy behaviors for their children, such as hygiene, healthy eating and physical activity.

## RESEARCH

Because research demonstrates the powerful potential of early education programs to promote children's health, the Ounce **research team** urges the early education field to assess health outcomes. Its publication ***Start Early to Build a Healthy Future*** calls for the field to examine and record the full spectrum of health outcomes associated with early education programs, to inform the development of innovative, health-focused interventions. And the Educare Learning Network Research & Evaluation Committee, in its recent ***National Research Agenda for Early Education***, echoes this imperative. Here are some examples of ways that these research values are being put into practice: the ongoing **Educare Randomized Controlled Trial** and the **Ounce Doula Home Visiting Randomized Controlled Trial** measure myriad health outcomes; and **two studies of Educare** have explored the relationship of adverse childhood experiences to various childhood outcomes, with a focus on social-emotional and behavioral health.

## PROFESSIONAL DEVELOPMENT

The **Ounce** is the recognized training provider for all home visitors in Healthy Families, Parents Too Soon and Parents as Teachers programs in Illinois. Research findings on the powerful impacts of traumatic early experiences on young children's lifelong health have been integrated into home visitor trainings. What's more, the Ounce has created training events exclusively focused on trauma, and in Chicago, a **pilot project in home visiting programs managed by Ounce staff has a special focus on trauma-informed work**. As a result, trauma-informed best practices have been incorporated into home visiting programs across the state. And now, after nearly 30 years of training home visitors in-person, the Ounce is about to launch professional development courses online to bring evidence-based practices such as these to home visitors and supervisors across the country. The first-of-its-kind Online Home Visiting Professional Development program will expand our reach to 20,000 home visitors nationwide to drive better outcomes for 1.5 million children and families in poverty.



## ENDNOTES

- 1 For a comprehensive list of all resources referenced in this brief, please see the full report: Fisher, B., Hanson, A., and Raden, T., (2014). "Start Early to Build a Healthy Future: The Research Linking Early Learning and Health." <http://www.theOunce.org/health>.
- 2 Ibid.
- 3 Ibid.
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